KANSAS MEDICAL JOURNAL.

VOL. V. TOPEKA, KANSAS, MAY, 1893. No. 5.

The Study of Comparative Anatomy.

Read before the Eastern Kansas Medical Society at Topeka, April 13, 1893,

By A. H. THOMPSON, D.D.S., Topeka, Kansas.

Appreciating the compliment of the invitation of your secretary to present something to you upon the subject of comparative anatomy, the writer will recapitulate some views which have been presented to the societies and journals of his own specialty, in endeavoring to urge upon the dental profession the necessity of this study. These views of course bear on the subject mainly from the dental standpoint, but are equally applicable to any other part of the animal organism, or all of it together, as illustrating the value of comparative anatomy to the human anatomist and physiologist.

It is universally conceded by students in all branches of learning that the comparative method in any study is the only scientific method. It is not enough that one branch be studied alone and exclusively, be that study and investigation ever so minute and thorough; for although thoroughness and minuteness will make depth of learning, there must be breadth of knowledge as well, and to insure breadth a given branch must be compared with its collateral branches. This requires frequent excursions into other fields, not only to illuminate one's special branch, but to broaden the mind and fortify it against exclusiveness. Special branches and specialists are necessary of course, for knowledge is infinite and human powers are limited; but the best and wisest devotion to a specialty does not exclude all other knowledge, but rather includes a knowledge of those collateral branches which serve to illuminate the special field to the end of its better understanding and a scientific comprehension of its relationships.

Especially is this true in regard to the study of man, since he has come to be investigated scientifically in his relations to the rest of the animal kingdom. Before this era, when man abrogated to himself a sort of divine superiority over the rest of nature, he would not submit his royal person to comparison with other animals. Now, however, as Dr. Holmes has it, "man is studied as the rocks and stars," and the scalpel, the test-tube and the microscope are applied to him as to other objects in nature, which are to be studied and investigated.

Therefore the comparative method in the study of man is now recognized as the only scientific method, and is the only one generally pursued. Not only are his anatomy and physiology illuminated and better understood by comparison with those of other animals, but even his psychology is now being subjected to this method. The old systems of psychology, like the old systems of biology, will probably go to the wall, and many idols will fall before the irreverent sweep of the comparative method; but it will bring us nearer a correct understanding of the mind and its faculties.

Prof. Joseph Le Conte ("Evolution and Religious Thought") says: "There are two widely distinct views concerning the relation of man to Nature — the one as old as the history of human thought, the other only now urged upon us by modern science. According to the one, man is the counterpart and equivalent of Nature; he alone has, in fact is, an immortal spirit, and therefore belongs to a world of his own. According to the other, man is but a part, a very insignificant part, of Nature, and connected in the closest way with all other parts, especially with the animal kingdom. He has no world of his own, nor even kingdom of

his own; he belongs to the animal kingdom. In that kingdom he has no department of his own; he is a vertebrate. In the department of vertebrates he has no privileged class of his own; he is a mammal. In the class of mammals he has no titled order of his own; he is a primate, and shares his primacy with the apes. It is doubtful if he may enjoy the privacy of a gentry of his own — the Homidæ — for the structural differences between him and the anthropoid apes are probably not so great as between, for instance, the sheep family and the deer family.

"Now, it is evident that these two standpoints are only views from different points — the psychical and structural. From the psychical point of view it is simply impossible to exaggerate the vastness of the gap that separates man from even the highest mammals. From the structural point of view, on the contrary, it is impossible to exaggerate the closeness of the connection. Man's body is identified with all Nature in its chemical constituents, with the bodies of all animals in its functions, with all vertebrates, especially mammals, in its structure. Bone for bone, muscle for muscle, ganglion for ganglion, almost nerve fiber for nerve fiber, his body corresponds with that of the higher mammals. Whether he is derived from lower animals or not, certain it is that his structure, even in its minutest details, is precisely such as it would be if he were thus derived by successive slight modifications.

"Now of these two views the latter has been in recent times enormously productive in increasing our knowledge. Anatomy has become truly scientific only through comparative anatomy, physiology through comparative physiology, embryology through comparative embryology. Sociology is fast following in the same line, and becoming scientific through comparative sociology. Is not the same true also of psychology?"

But it is to the study of comparative anatomy especially and its methods that we wish now to direct attention. This study is attractive and fascinating to those to whom, like specialists in other fields, it elects to open its doors. It is not necessary to defend its beauties now, but rather to point out its value and utility in the study of man.

And first as regards the great principles. The leading principles of comparative study are the analogy and homology of parts and organs. As Prof. Le Conte says (op. cit.): "In biology those organs or parts in different animals are said to be analogous, which, however different their origin, have a general similarity of form and especially of function; while those are called homologous which, however different their general appearance and however different their function, yet may be shown to be modifications of originally the same part, but altered for different purposes. The analogous parts look and behave as if they were the same, yet are not; and the homologous parts look and behave very differently, but are in fact the same part in disguise. For example: the wing of a bird and the wing of a butterfly are analogous organs and have the same function — flying; but they are not homologous, for they are not the same organ or part and have not been formed out of the same original part by modification. But the wing of a bird, the forepaw of a reptile or a mammal, the wing of a bat, the arm and hand of man, the foreleg of a horse or of a cat, though so different in form and function, are homologous parts. They have the same origin and are of the same general structure, but are greatly modified to adapt them to different functions so that the general resemblance is lost. These are homologous but not analogous parts. Their structure is precisely such as it would be if they had all originated from some archetype fore-limb by modification for different purposes. Again, the lungs of a mammal and the gills of a fish are analogous organs, since they have the same function of aeriation of the blood; but they are not homologous, as they are not built on the same plan nor could one be derived from the other. But there is an organ in the fish which is homologous with the mammalian lung — the air bladder, which is used by fish only for flotation. This organ is the beginning of lungs which by gradual steps is developed into the

lungs of the higher, air-breathing animals. "These examples might be multiplied to the extent of all the organs and parts of the body, but these serve to show that analogy has reference to general resemblance of form, determined by similarity of function, however different the origin of the parts may be. Homology has reference to community of origin, however diverse may be the organs and their functions now."

It is by homology of structure, not by superficial resemblances or even the functions of parts, that the whole animal kingdom is divided and classified. All animals are grouped in relation to their plan of structure. There are first the two great divisions of the animal kingdom — the invertebrates and the vertebrates. The latter has a vertebral column, the other has not. The general structure in each class is governed and the organs are arranged according to the primary plan. These subkingdoms are then divided and subdivided until division can be carried no further when it reaches species; each division depending on peculiarities, and classification depending on homologies. The law of differentiation comes in in the development and specialization of forms, by which the law of adaptation to new functions operates to account for the new direction given to development, by which parts are modified and changed. So in regard to the limbs of vertebrates, which present such great variety, as the wings of birds, the limbs of the horse, cat, turtle, frog, whale, the fins of fish, etc., new functions led to differentiation of structure while the general plan remained the same. This law of differentiation is the fundamental law of evolution. It first causes the divergencies that take place in the process of the evolution of the cells, forming the embryo by which the typal destiny of the individual is indicated. The cells diverge again to form different tissues and those in turn to form different organs to perform different functions. So in the formation of the limbs the different cast was given to each one as the ruling type indicated, at a certain stage in the development of the embryo, and the law operates also in regard to the evolution of all other limbs and organs.

The development of the mammalian head is of especial interest, and more particularly the face, jaws and teeth. The brain case has been modified wonderfully, from the lowest to the highest vertebrates, to accommodate the increasing brain, until in man it towers over the face, and the jaws become reduced to a more or less rudimentary condition as compared with other animals. The face has some curious analogies in the animal series, especially when comparing its structures as evolved for the accommodation of the sense organs, with the sense organs in other forms. For instance: in the vertebrates the sense organs have a definite position on the head and a definite relation to the brain, so that in the mammalia the face and sense organs are analogous.

As compared with lower forms, however, it is a mooted question as to what the jaws really are and what are their homologies. It is known that the jaws are developed from the two upper segments or rings of gill-clefts of fishes and amphibians, but it is not settled whether they are homologous with the limbs or not. They are appendicular structures like the limbs, and are, like them, suspended from the vertebral skeleton, but are probably not homologous. It is well known from the developing embryo where the upper pairs of gill-clefts unite to form the jaws, but their homology is obscure.

Throughout the vertebrate series, from the fishes and amphibians up through the reptiles, birds and mammals to man, the jaws are homologous and analogous, and from origin to function pursue a strict relationship and resemblance. They vary somewhat as regards the extra functions performed by them in different animals, but the main purpose is preserved in all. In the herbivorous mammals, for instance, there is extensive masticating area and a loose movable joint to allow of free movement of the lower jaw, or mandible, in every direction, for the minute comminution of coarse vegetable food. In the carnivora there is simple vertical movement for the seizing and cut-

ting of flesh, but without lateral movement of the jaws, as the flesh food does not require mastication. In the rodents there is extensive vertical movement to allow of cutting with the strong incisors, and considerable horizontal motion to permit of mastication. In the more omnivorous forms there is a combination of these movements without the extremes, but in all there is an adaptation of means to ends. The study of the mechanism of the jaws in lower forms, their origin, development and function, comparing them step by step with those of man, would throw much light on many questions. For instance, much interesting information regarding and elucidation of the vexing problem of the causes of irregularities of the teeth, could be acquired by the more extensive study of the jaws in lower forms and even in the lower races of man, as compared with the higher races. Many resemblances could be worked out which would account for erratic forms of the jaws in man, which we now consider to be abnormal freaks, might only be reversals to former types.

In the field of the study of the teeth, odontography, in relation to and comparison with those of lower animals, there is a mass of interesting material to be gathered. Every one knows that the teeth in man are more or less rudimentary as compared with lower forms, and it is only by comparison with those forms that a proper understanding of them can be attained. The developmental history of a tooth is as interesting as that of a species. The light that is thrown upon this special field by such investigation, is very great, and if we would pursue it would help us to understand many things which are now regarded as mere curiosities or abnormalities, but which are really subject to simple laws, if we would but study and understand them. We are far behind the science of the age in our methods of studying the teeth, and in the quantity and quality of the knowledge of the subject which we know and teach. The mass of the profession know little of comparative anatomy or of its value in our field; and so far as the young men are concerned, the fault lies with the instructors and the system in the colleges. Accounts often appear in the dental journals of anomalies in the possession of correspondents, which are described as being very wonderful and unique, but which the student of comparative anatomy knows are merely reversals. For instance, a three-rooted upper biscuspid is a reversal to the anthropoid type, as the apes have that form, their premolars being implanted with three roots. Or again, an additional incisor, a double, it may be, is reported, which is also a reversal (the original number of incisors being six, two having been suppressed), or one or both laterals may be suppressed entirely, and for several ganerations in a family. This the student knows is because the lateral incisor is becoming erratic, like the wisdom tooth, though in less degree, and like it is starting on the road to disappearance. The wisdom tooth is quite often absent in civilized man, because, as is well known, it is on the high road to total suppression in the species, although it is as good and as well set in the jaws in the lower races of man and the higher apes as the other molars.

This suggests the subject of additional or extra teeth in the human series, "supernumerary teeth," as they are called. These are usually considered to be freaks and accidents; but the evolutionist knows that they are produced by the workings of the law of atavism, *i. e.*, the reappearance of organs or parts that have, in the course of development, been aborted. Man has lost twelve teeth, *i. e.*, the difference between thirty-two and forty-four, the normal, typical mammalian number, and supernumerary teeth are the representatives of the number that have been suppressed. Nature, in response to some unknown impulse, makes a spasmodic effort, a spurt of energy, and reproduces the original dental germs. Additional molars, bicuspids or incisors, which were the last teeth to disappear from the species, are, of course, the first to reappear. They are mostly deformed and rudimentary, but rarely a fully-formed supernumerary tooth is reproduced.

There are occasional resemblances to lower forms which crop out in individual teeth

that are highly interesting, and but for the light thrown upon these eccentricities by comparative study would be considered as mere anomalies and freaks. For instance, the tri-cuspid upper molar, as sometimes seen, especially in the Latin races, is a distinctly lemurine character, as pointed out by Prof. Cope some time since. The special connection between these widely-separated species is only collateral, of course, and is quite as nnknown as the paleontological history of man itself. But the knowledge of the lemurine dental characteristics points out that the peculiarity of the tri-cuspid upper molar is a reversion, a reappearance according to the law of atavism, and that a scientific reason can be given to account for the particular form. Or again, the wrinkled face of the lower wisdom tooth, which appears in some persons, is a reappearance of the type of the orang, which has such molars; or this tooth may be tricuspid, as in the Macaiques. Again, the vertical grooves on the face and the corresponding notches on the edges of the incisors, which are so conspicuous in childhood, but as soon worn away, are rudiments of a permanent condition in some lower animals. The galeopithecus lemur has the lower incisors divided into teeth like a comb, and many of the carnivora have these teeth deeply notched. In man the grooves and notches, which soon wear away, are suggestions indicating callateral inheritance, which in other forms is carried further and becomes permanent. Again, the canines are much reduced in size in man, but still retain the backward curve that recalls the sabre shape so conspicuous in the long, trenchant canines of the carnivorous animals and the baboons. There is a large diastema found in the apes and most monkeys — and before them in the carnivora — in front of the upper canine, between it and the lateral incision, into which the long lower canine enters when the jaw is closed. This diastema is sometimes found in the lower races of man, and rarely there is a space between the upper canine and lateral incisors in civilized man in well-formed jaws, (when it is not due to disease,) which must be considered a survival. Again, the cusps of the grinding teeth of the insectivora are usually long and sharp for the crushing of the chittinous armor of insects. This peculiarity sometimes reappears in the extra long molar cusps of man, especially of the posterio-lingual cusp of the upper molars. The reappearence of extra cusps and cingulums on the human molars might, perhaps, be traced to the same source, as the molars of the insectivora, Tomes says, "fairly bristle with cusps." Again, the new world monkeys have thirty-six teeth in very nearly all species, while the old world quadrumana nearly all have the human formula, thirty-two, man being descended as a colateral branch with them. The higher apes have the human formula exactly, and also have the oblique ridge, so characteristic of the human upper molars. This ridge is not found in the lower quadrumana, and seems to have been a later appearance.

Many other features in the teeth of man and their environments have been noticed which are explained by comparison with lower forms, and many more can be explained by further study and comparison. In fact, nearly all forms and features of the teeth, as of other organs, being inherited, come from previous forms and indicate relationship with them. And thus in our own branch we insist that the value of comparative anatomy cannot be overestimated. It should be given a more prominent place in the curricula of our colleges and in our text-books, that the practitioner may gain a more scientific foundation for the principles that underlie practice. In this age of the world knowledge is of no value whatever if it is not exact to the very minutæ. In former times general knowledge was quite sufficient for the purposes of life, even if it was not very exact as to details; but in our day such general knowledge is not sufficient. Sometimes stupendous consequences depend upon the mastery of a minute detail. No fact is so insignificant as to be valueless, therefore it is worth all the labor that can be bestowed upon it to make it exact. In modern science much depends, we might say everything depends, upon exact knowledge of often ap-

parently insignificant facts; but these, when marshaled in numbers, give birth to great principles, which revolutionize thought and affect the destinies of men.

Pneumonia.

Read before the Topeka Academy of Medicine and Surgery, April 10, 1893,

By J. H. CANNON, M.D., Topeka, Kansas.

There is no more appropriate time for a discussion of the acute diseases of the lungs than a time when they constitute the most important factor of the general practitioner's daily work.

Acute lung diseases have always possessed a peculiar interest to me, for the reason that the battle is soon on without much preliminary skirmish, and is soon off if scientific treatment and constitution prevail; sooner off if they do not.

Under the head of pneumonias we shall briefly consider the two commonest forms, viz.: croupous pneumonia and broncho-pneumonia, with special reference to the differential diagnosis.

I am prone to believe that oftentimes no distinction is made. The physician being satisfied that it is a case of "lung fever," and either does not care to trouble his scientific attainments by an effort to differentiate, or knowing that his treatment would be the same in either case, he simply calls it lung fever and goes ahead.

I remember once asking a physician, with whom I was called in consultation, what form of pneumonia his patient had, and he said: "Why, just common pneumonia."

Croupous pneumonia is defined as a specific, infectious, self-limited disease, giving rise to definite pulmonary lesions, is non-contagious, its duration from seven to ten days. Up to the first quarter of the present century no distinction was made between bronchitis, pneumonia and lung collapse. Until the middle of the present century no distinction was made between croupous pneumonia and broncho-pneumonia, and in very recent years the discovery has been made that these diseases are not purely inflammatory in character, caused by exposure to cold, wet, etc., but the fact that the strong and weak, the inhabitant of the temperate regions and the cold regions of the north are alike subject to its invasion, led the investigator to look for some other cause than those cited. Friedlander found in the lungs of persons dead from pneumonia a peculiarly-shaped micro-organism to which he gave the name pneumococcus. Later on, its presence was demonstrated in the rusty-colored sputa of pneumonia.

Strictly speaking, pneumococcus is a misnomer. Its form is rather that of a bacillus, one diameter exceeding the other. Pneumobacterium would be the more appropriate term. The parasite occurs single or in chains of three or four short, thick rods, surrounded by a well-marked gelatinous capsule.

Its occurrence in the rusty sputum is comparatively rare and often absent, a fact which makes it of little or no diagnostic value. The clinical course of pneumonia and its occasional endemic and epidemic character suggested its infectious character long ago, but little is yet known of the habits of the virus or its manner of entering the system.

Epidemics of pneumonia have occurred in localities of bad drainage, bad sewage and filth. When several cases occur in the same house or neighborhood, it would seem to suggest contagion, but it must be remembered that occupants of the same house or neighborhood are alike exposed to the same unsanitary surroundings.

Broncho-pneumonia is defined as an acute inflammation of the bronchial lining membrane, involving the connective tissue bronchioles and air cells. In severe cases every component part of the lung may be involved.

The term catarrhal pneumonia is very frequently used to denote this condition, but is evidently incorrect because tissues other than mucous membrane are affected to a marked degree. Capillary bronchitis is another designation of this condition, which,

like catarrhal pneumonia, should be relegated to the past. It means nothing more than a beginning of a broncho-pneumonia, and it has been clearly shown that inflammation of the finer bronchi does not exist apart from parenchymatous changes. Neither is broncho-pneumonia truly a lobular pneumonia, as it is sometimes called. A lobular pneumonia does not suggest the bronchial inflammation which is essential to the disease.

Broncho-pneumonia is produced by the same micro-organism, no doubt, as the croupous form. It being the form of pneumonia common to children under five years of age, the anatomical peculiarity of the child's lungs so modifies the pathological manifestation as to warrant the classification.

This disease is one of the greatest enemies of childhood. Between the years 1879 and 1886 inclusive, the Boston health board reports show seventeen per cent. of all deaths occurring in children under five years of age to be due to broncho-pneumonia. It often follows measles, scarlet fever, whooping cough; is present to a greater degree in low, wet, badly drained and ventilated portions of cities and towns.

The greatest per cent. of deaths from broncho-pneumonia occur during the first two years of life. As the lung develops and approaches the adult type, which it reaches at five years, the chances for recovery from the disease are greatly increased. Croupous pneumonia is not nearly so fatal a disease in children as broncho-pneumonia.

Differential Diagnosis.—In the differential diagnosis of diseases there is often laid down distinctions without a difference, and we find that particularly true of the diseases under consideration. It is a differentiation I have always found extremely hard to make. While broncho-pneumonia is peculiarly a disease of childhood and croupous pneumonia of adult life, yet they are not limited to those ages. The most distinguishing features are the periods of invasion.

Croupous pneumonia being ushered in by a sudden chill; temperature mounting up to 103 or 104 in a few hours. Broncho-pneumonia by chilly sensations at most, following days of cough and evidence of cold; temperature not high at first, possibly 101 or 102, falling often to normal; temperature curve irregular. In croupous pneumonia temperature curve regular. Croupous pneumonia—rapid but not laborious breathing. Broncho-pneumonia—rapid and laborious breathing, the accessory muscles being called into use. Croupous pneumonia—no dyspnœa. Broncho-pneumonia—paroxysms of dyspnœa. Croupous pneumonia—consolidation one-sided. Broncho-pneumonia—consolidation on both sides. Croupous pneumonia—dullness over considerable area. Broncho-pneumonia—dullness seldom extensive; usually in more than one spot; often merely a sense of resistance on percussion. Croupous pneumonia—fine crepitant rales on edge of cousolidation. Broncho-pneumonia—moist subcrepitant rales, occasionally coarse, over spots where dullness is detected; bronchial respiration weak, absent or blowing. Croupous pneumonia—bronchial respiration increased, vocal resonance over center; duration, seven to ten days; recovery the rule. Broncho-pneumonia—duration indefinite, but much longer than croupous form; often leaves permanent lesions; very fatal.

The prognosis in broncho-pneumonia should always be guarded. Deepseated consolidation may exist and not be discovered, and what may seem a simple case may be in a few hours a very grave one.

While I do not believe a fine discrimination between the two is absolutely necessary so far as medication is concerned, as the treatment of both must be mainly symptomatic, yet to intelligently observe the progress of the disease and to give a prognosis which is not wholly guesswork, a definite and accurate knowledge of the pathological condition which is taking place in the lung is absolutely necessary.

As to treatment, much or little may be said with about equal benefit. A certain line of treatment which in the hands of one may seem successful, may seem immediately fatal in the hands of another.

First of all and upon which we can all

agree—a clean patient in a clean bed in a large, clean, well-ventilated room. Temperature in room kept at 65 to 70 degrees without direct draughts on patient. A quiet and competent nurse, and only one; nicely-prepared food, milk being the ideal; not kept in the sick-room. No blisters, please, nor other strong irritants which make the patients scowl when they see us, and deprive us of further opportunity to make further physical examination, besides I think they are useless. No heavy or foul-smelling hop or mush poultices. A sheet of cotton, made to fit the chest, quilted between thin cotton cloth, or if there is intercostal pain, a pan-cake, made thin, equal parts salt and flour, fills a long felt want. Try it.

Due attention to patient, but not indefinitely and eternally wanting to do something for the patient, will add much to his comfort.

So much for outside treatment. For internal medication not too much. A mild cathartic in the beginning if indicated. I prefer one-tenth grain calomel; repeat until desired result is obtained. If temperature is high, three or five grains phenacetin may be repeated every hour for three or four doses with safety. It will reduce temperature, calm the nervous system and promote perspiration. A single cough mixture will allay excessive cough, and perhaps produce freer and easier expectoration. Dover's powder is my favorite opiate where any is indicated.

Do not give alcoholic stimulants. To give alcohol from first to last, as is the custom of some physicians, is criminal. Just as well whip your horse from the bottom to the top of a long hill; he will give out all the sooner for it. It may be good in a pinch of an hour, but is worse than useless when given for days as I have seen it. I want to know whether I have delirium from disease or intoxication, and when our patients are getting too little oxygen. A very little alcohol often repeated will intoxicate as I have often seen.

My observation has been that it destroys the appetite, deranges the stomach, disgusts the patient and does no good. Give hot milk or strychnia, small doses quinine and whip over the pinch with nitroglycerine. After crisis or lysis, tonics and nourishing diet.

Finally, I desire to call attention to some observations extending over several years, viz.: In croupous pneumonia of left lung, in either lobe, the expectoration contains much more blood, amounting almost to hemorrhage at times; that left side pneumonias depress the heart more than right side consolidation, and are much more fatal; that apex consolidation on either side is accompanied with more delirium than when it occurs in the lower lobes; that I have never seen a typical case of prune-juice sputa as described in the text-books, and would be much alarmed if I did see it. Walshe, in Diseases of Lungs, says all cases of pneumonia with hemorrhage he considers tuberculosis. Dobel disputes it, and I agree with Dobel, for I have observed many cases after the excessive blood-spitting spoken of above make good recoveries with no symptoms of tuberculosis developed as yet.

I have lately had under observation a case of croupous pneumonia in a girl, æt. fifteen, interesting because of the extraordinary (to me) high temperature—104 in the morning and 106 in the evening for five days, gradually declining to normal by the tenth day. Good recovery followed.

Anatomy of the Lungs.

Read before the Topeka Academy of Medicine and Surgery, April 10, 1893,

BY

D. F. RODGERS, M.D., Topeka,

PROFESSOR OF ANATOMY IN THE KANSAS MEDICAL COLLEGE

At the request of the president of the Academy of Medicine and Surgery, I have consented to present you a few facts on the anatomy of the lungs, preliminary to a paper and discussion on pneumonia; and in doing so I shall attempt to present my subject in such a manner as not to worry your patience with its abstractness, and also avoid intrud-

ing on the physiology of the lungs and the pathology of pneumonia.

It is a trite saying that "pathology is but perverted physiology." The existence of both is dependent on the anatomy of the part.

To properly consider the anatomy of the parts concerned in pneumonia, we must not only consider the component parts of the lungs, viz., the bronchi, air passages, alveoli, connective tissue stroma, bloodvessels, lymphatics and nerves, but the pleuro-pulmonary artery and vein, the pericardium and heart, for all of these structures are so closely related that they play an important part in the complications, endangering life in pneumonia.

The two lungs are grayish, spongy, elastic organs, varying in color with vascularity and inflation, darkening with age and city life. Each lung has a rounded apex rising slightly above the clavicle, and a concave base resting on the diaphragm. The thin margin reaches to the eleventh rib behind the ninth on the axillary line on the right and the tenth on the left, and to the upper edge of the seventh costal cartilage on both sides in the mammillary line. The outer surface is convex, the mediastinal surface concave, and into a limited area of it the bronchi and vessels enter. The thin anterior edge overlaps the pericardium, that of the left lung is deeply notched by the heart and prolonged into a process below and in front. The posterior edge is thicker and on the left side is moulded on the thoracic aorta. The right lung is thicker and shorter with a higher and more concave base than the left. Each lung is divided into upper and lower lobes by the great fissure, extending in a spiral line from opposite the third dorsal vertebra behind to the sixth costal cartilage in front. The upper lobe on the right is subdivided by a secondary fissure which arises from the primary opposite the sixth rib at the posterior axillary line and passes forwards to the fourth rib cartilage, cutting off a middle lobe. The surface of each lung is mapped into polygonal spaces—the bases of the lobules. In the adult each lobule is isolated by a dark line of carbonaceous deposition. The root of the lung is the only place at which it is attached. The vena azygos arches over the right root, the aorta over the left. Behind the right root is the posterior pulmonary plexus of the vagus nerve, behind the left is the descending aorta and the posterior pulmonary plexus of the vagus. In front of each root is the anterior pulmonary branch of the vagus, and still farther forward the phrenic nerve. The superior vena cava also lies in front of the right root. The pulmonary veins return the arterialized blood from the lung to the left auricle. Traced from thence they pierce and carry off an expansion from the pericardium, and pass horizontally backwards and outwards into the root of the lung, where they are separated from each other by an anterior descending branch of the bronchus. They divide at first dichotomously, but afterwards in an irregular and often plexiform manner. The branches do not accompany the arteries or air tubes, but lie rather superficial to both. They receive the blood from the pulmonary arteries and also from the anterior divisions of the bronchial arteries. Each pulmonary vein trunk is about three-fifths of an inch long. The upper is the larger on the right and receives the blood of the upper and middle lobes. The lower is larger on the left. The pulmonary arteries, whereby the venous blood is carried into the lungs to be aeriated, spring by a single trunk from the infundibulum of the right ventricle. This lies for the whole of its extent within the pericardium, a serous sheath of which ties it to the aorta. It is the foremost of the great cardiac vessels and arises between the auricular appendages, from thence it arches backwards and a little upwards and to the left, its concavity embracing the front and side of the aorta, and its convexity being separated by the pericardium from the left lung. Having reached the level of the sixth dorsal vertebra on a plane in front and below the bifurcation of the trachea, it divides into its right and left branches, which piercing the pericardium on each side pass nearly horizontally to the roots of their respective lungs.

The sectional area of the pulmonary artery is slightly greater than that of the four pulmonary veins. The right pulmonary artery, larger and wider than the left, passes behind the ascending aorta and beneath the arch, from which it is separated by the branches of the right deep cardiac nerves. It divides into a large upper and a small lower branch, the larger divides again into two, which supply the upper and middle lobes; the smaller branch enters the lower lobe. By successive divisions, which correspond to the divisions of the bronchi, the branches for the smaller lobes arise, each of which is an end artery and does not anastomose with its neighbors. Besides the lobular branches there arise five bronchial branches which supply the bronchial tubes and anastomose with the capillaries of the bronchial arteries. The left pulmonary artery divides into two branches corresponding to the two lobes.

The bronchial tubes are but a continuation of the trachea, and resemble it in structure. In the secondary branches the walls alter in structure, the cartilages cease to be in regular rings and become irregular patches, and the muscular fibers form complete circles in the walls of the tubes. When the branches become one-twenty-fifth of an inch in diameter they lose all trace of cartilage and of glands, and the wall of each presents irregular dilatations. These begin as small, irregular pouches on one side of the tube, but they progressively enlarge, ultimately surrounding the tube which expands to about one-eighth inch in diameter and ends as a saculated alveolar passage, whose wall and fundus consists of blind pouches, the air cells or alveoli. Each of these endings is called an infundibulum. In the infundibula the muscular coat disappears, the longitudinal elastic fibers break up into an interlacement around the mouths of the air cells and are connected with the elastic interlobular and interalveolar tissue. The columnar epithelium becomes changed into thin pavement cells without cilia, between which are small polygonal granular cells in little clusters of two or three with pseudo-stomata between them. These cells lie on a thin basement connective tissue in which are amœboid cells. Around the air cells in the interalveolar tissue there are a few smooth muscle fibers and loose alveolar tissue. The air cells are polygonal and vary in size at different ages.

The branches of the pulmonary artery accompany the air tubes until they become one-twenty-fifth of an inch in diameter, when they divide more frequently than the tubes. The minutest arterioles ramify between the alveoli, ending on their walls in a fine meshed capillary plexus which lies in a single layer in the ridges between the air cells. The vessels are covered by epithelium on both surfaces and hence project into the air cells on each side. Entering the root of each lung are the bronchial arteries, one on either side. These accompany the air tubes, and their branches go partly to the lymphatic glands, partly to the interlobular areolar tissue, and also to the walls of the bronchial tubes and their branches, in the muscular coat of which they form a capillary plexus with transverse meshes, and send branches to the mucous coat which communicate with branches of the pulmonary arteries and form a plexus with longitudinal meshes. These capillaries empty themselves into the pulmonary veins, while those of the first and second series of branches open into the vena azygos on the right and into the superior intercostal vein on the left. The lymphatics of the lung are numerous. The superficial lymph vessels converge to the root of the lung where they end in the bronchial glands. The deep lymphatics accompany the vessels and unite into the pulmonary glands on the walls of the smaller bronchi and in angles of bifurcation of the tubes. There are about forty of these glands in the right lung and thirty in the left. The nerve supply of the lungs comes principally from the vagus, which divides into an anterior and posterior pulmonary plexus, and the last cervical and four upper dorsal sympathetic ganglia.

The pleura covering the lungs consists of two layers—superficial and deep. The former is of a thin fibro-membranous character, covered by a layer of transparent,

large, flat endothelial cells. The deep or subserous layer is of loose areolar tissue with many elastic fibers. Like all serous sacs the pleura has a lymph canalicular system which connects with that of the subpleural alveoli on one side and by means of stromata with the pleural cavity on the other.

Now for a few practical applications. To begin, let us consider pneumonia in infants and young children.

Pneumonia occurring before the age of five years differs materially from that occurring after that age or in the adult lung, because of the difference in anatomical construction. Before this age the extent of the bronchial tubes is greater than that of the air spaces, these latter being rudimentary, appearing as bud-like dilatations at the tips of the branches of the bronchial tree.

The connective tissue stroma is thicker and tends to cellular proliferation. The submucous connective tissue of the bronchi is loose and more abundantly supplied with nuclei, and its vessels are loosely held. The cells lining the air spaces form a continuous layer, the alveoli are small, their epithelia proliferate abundantly and the absorbents accomplish their work slowly, the blood-vessels playing a more important role. Taking all these things, then, in consideration, we must necessarily have a broncho-pneumonia or the capillary bronchitis of the older authors. By reason of the close relation of the pleura and lung we have pleuritis. The pericardium also, especially on the left side, is in so close relation to the lung that pericarditis is a frequent complication. The relation of the diaphragm below explains the hiccough occurring in many serious, if not fatal, cases. Sudden deaths from heart failure are explained by remembering that as the exudation proceeds the blood current in the pulmonary artery is obstructed, the right ventricle and auricle are enfeebled by distension, and this condition, in conjunction with the increase of fibrin in the blood, leads to coagulation.

The rich supply of lymphatics to the lungs explains the ease with which pneumonia may develop from diseases in remote organs, also how remote organs may become affected during the course of pneumouia. The intimate relation of the lungs with the sympathetic nervous system explains the frequent herpetic eruptions and gastric disorders.

There are many complications arising which are due to anatomical relations which will suggest themselves to us if we will but draw our attention occasionally from the latest new remedy to meet all the complications of pneumonia and seek out effects due to causes that ought to be anticipated.

Physiology of Lungs.

Read before the Topeka Academy of Medicine and Surgery, April 10, 1893,

BY

T. W. PEERS, M.D., Topeka,

PROFESSOR OF PHYSIOLOGY AND DISEASES OF CHILDREN IN THE KANSAS MEDICAL COLLEGE.

The anatomist will tell you about the lungs—where they are, how many, what form, etc.

The histologist will tell you their minute structure—what kind of cells, what tissues, etc.

This will leave the physiologist to tell what the lungs do and how they do it.

In brief, the lungs are for the purpose of supplying the tissues with oxygen and excreting certain waste products, such as CO_2, ammonia, water and organic matter.

In order to do this, respiration is established. With each inhalation a supply of oxygen is taken into the lungs, and with each exhalation CO_2, ammonia and water are thrown off. Respiration is performed by the expansion and enlargement of the chest cavity. This enlargement by natural, physical laws produces an inflow of atmospheric air. There is nearly enough elasticity in the chest walls to expel the air, so that ordinarily the muscles are only used in inhalation. The diaphragm, intercostals, levatores costarum, the three scaleni and the sterno-mastoid are the principal muscles

concerned in respiration. There are three types of respiration:

1. Abdominal.
2. Inferior costal.
3. Superior costal.

The first is seen in infants. In the male there is a combination of the first and second. In women we have an illustration of the second. There are several reasons why this fact has been discussed and argued a long time. The two reasons which appear most strongly to me are: First, their mode of dress, and second, the fact of maternity.

T. J. Mays, of Philadelphia, took measurement of eighty-two Indian girls in the Lincoln Institute and found that their breathing did not differ from that of men. They were from sixteen to twenty years of age, and had never worn corsets or tight clothes. During pregnancy the abdominal muscles are stretched and diaphragm pressed upon so that superior costal breathing is a necessity.

The frequency of respiration varies with individuals and in the same individual, but it seems to have a fondness for multiples of four. Hutchinson in observations on 1,897 men found 1,043 breathing either sixteen, twenty or twenty-four times per minute, and that there was a range of from nine to forty per minute. Age has much to do with frequency. A newly-born baby breathes from forty to fifty times per minute. A child of five years, about twenty-eight times; a man at thirty breathes sixteen times per minute, and at fifty years of age it is increased a little to eighteen or twenty per minute.

Expiration and inspiration are not continuous, but there is a pause after each. The longer pause being after expiration. The intensity of respiration differs largely in different individuals, making it much easier to auscultate in some cases than in others. Coughing, sneezing, laughing, sighing, yawning, sobbing and hiccoughing are all modifications of the respiratory act, and depend very largely on the way the diaphragm acts.

The capacity of the fully-expanded lungs of a man about five feet eight inches tall is 330 cubic inches. The air in the lungs is given the following names for convenience of description:

1. Residual air.
2. Reserve air.
3. Tidal or ordinary breathing air.
4. Complemental air.

The first is the air which remains in the lungs after a forced expiration.

Reserve air is that which remains in the lungs after an ordinary expiration, less the residual air. It, like the residual air, amounts to about 100 cubic inches.

Tidal air is that usually breathed, and amounts only to ten to twenty-five cubic inches.

Complemental air is that which can be taken into the lungs by forced inspiration, often ordinary inspiration.

A small amount of the volume of air inhaled is lost in the body, as there is not as much exhaled as inhaled. It amounts to about one-fiftieth.

The air that is taken into the lungs in ordinary breathing is only about one-sixteenth of the capacity of the lungs, so that the fresh air does not more than fill the bronchial tube. The oxygenated air gets to the air cells by diffusion, and near the cells the air is quite a uniform mixture of exhaled and inhaled air.

Normal air contains 79.19 parts of nitrogen and 20.81 parts of oxygen, and this mixture at the surface of the earth is found to be the best for breathing purposes. In a higher altitude, respiration is often seriously interfered with because the atmospheric pressure is so reduced that less oxygen is contained in the same volume, and the blood cannot take up as much as is needed.

At a low altitude the pressure is so increased as to also interfere with respiration. In experiments on rabbits it was found that air must contain at least five per cent. of oxygen in order to sustain life. It was also found that a person could breathe and be comfortable in an atmosphere of pure oxygen, and that very little more was used by the body than when it contained twenty per cent. Only about five per cent. of oxygen ordinarily breathed is used by the lungs.

The only other gas capable of sustaining life even for a short time is nitrogen monoxide. Other gases either produce asphyxia negatively or are positively poisonous.

The quantity of oxygen used by the body varies with the temperature during digestion and because of muscular effort.

The following is an account of experiments made by Lavoisier & Sequin:

1. A man, in repose and fasting, with an external temperature of 90°, consumed 1,465 cubic inches of oxygen per hour.

2. The same man, in repose and fasting in a temperature of 59°, consumed 1,627 cubic inches in an hour.

3. During digestion he consumed 2,300 cubic inches per hour.

4. While fasting he raised a stone weighing sixteen pounds and three ounces to a height of 656 feet, and consumed 3,874 cubic inches in an hour.

5. He then, during digestion, lifted the same stone 692 feet and consumed 5,568 cubic inches per hour.

Very young animals consume little oxygen. New-born cats and puppies will live for thirty minutes under water, and cases are reported where babies are restored after seven hours of asphyxia.

Lean people consume more oxygen than fat persons, carnivorous more than herbivorous. A sparrow ten times as much, relatively, as a chicken.

In passing through the lungs the air loses about five per cent. of its oxygen. It gains in temperature, CO_2, water, ammonia and organic matter, and may either gain or lose nitrogen.

The temperature of the expired air is from 93 to 96°. The amount of CO_2 expired is about 1,220 cubic inches per hour. During a slow expiration, more is expelled than during a quick expiration; but in a given time, more CO_2 is expelled when the person breathes fast than when he breathes slow.

Exercise greatly increases the amount of CO_2 exhaled. Digestion and certain foods also increase it. Sleep diminishes the quantity. It is also modified by the temperature, by the moisture and by the seasons.

The oxygen is not simply mixed with the blood, but unites with the hæmoglobin in the red corpuscle, producing oxyhæmoglobin. The carbon dioxide on the other hand is absorbed by the plasma of the blood, and only a small amount makes a chemical union.

The respiratory sense has been referred to the lungs, but the following experiments show quite conclusively that its seat is in the medulla:

Dr. Flint opened the chest of dogs under ether, and kept up artificial respiration with a bellows connected with the trachea. While this was kept up he tied various arteries, and found that when the arterial blood became dark or the supply of oxygenated blood to the medulla was materially interfered with, the dogs began to breathe, and the violence of breathing had a direct relation to the amount and quality of blood going to the medulla.

Dr. Flint says: "In view of the experimental facts bearing on the question, it is probable that the respiratory movements are sometimes reflex and sometimes due to the direct excitation of the cells of the respiratory center by the absence of oxygen."

MAN born of woman is of few days and no teeth, and indeed it would be money in his pocket sometimes if he had less of either. As for his days, he wasteth one-third of them, and as for his teeth, he has convulsions when he cuts them, and as the last one comes through, lo! the dentist is twirling the first one out; and the last state of that man's jaw is worse than the first, being full of porcelain and a roof-plate built to hold blackberry seeds.—*Burdette.*

OBLIGING FELIX.—"Donn' yo' know, Miss Caprin, dat yo' will ruin yo' teeth eatin' dat candy?"

MISS CAPRIN.—"Is dat so? Denn I will take 'em out."—*Judge.*

SOCIETY PROCEEDINGS.

The Topeka Academy of Medicine and Surgery.

The Topeka Academy of Medicine and Surgery met in A. O. U. W. hall, Monday evening, April 3, 1893.

There were present Drs. McClintock, Longshore, Righter, Tefft, Lewis, Donaldson, Powell, Coldren, McCrea, Munn, Plummer, Hamilton, Schenck, Cannon, Stewart, Pelton, R. E. McVey, Alkire, Rodgers, Magee, Miner, Minney, Peers, Sheldon and W. E. McVey.

Visitors: Wallace, Evans, Storrs, Gundrie, Buckmaster, Sloan and S. E. Smith.

The applications of Agnes McKee Wallace, Frances Storrs and Stephen E. Smith, graduates of the Kansas Medical College, 1893, were referred to the board of censors.

A case was sent to the society by Dr. Conger, and the doctor not being able to be present, Dr. Munn was requested to present the case to the society.

A young man of about twenty-one years of age, of healthy, robust appearance, presented a tumor in the right pectoral region, which was first noticed after playing ball. Next day after throwing the ball he felt soreness, and in about a week after a tumor appeared. The accident occurred about one year ago, and the tumor has remained since that time, being some larger than when it first appeared. Occasionally it becomes quite sore, and there is some interference with the complete motion of the arm.

Dr. Munn thought it was probably an accumulation of serum or fluid in the aponeurosis of the pectoralis muscle, due to the injury and a low grade of inflammation following. Dr. S. G. Stewart agreed with this idea.

Dr. Powell asked how you could have an effusion in the aponeurosis of the pectoralis without more pain than he complained of.

Dr. Munn replied that we did have a history of pain in this case, and referred the doctor to effusions occurring in the fascia lata, which was a denser tissue than the aponeurosis here.

The following papers were presented: "Anatomy of the Lungs," by Dr. Rodgers; "Physiology of the Lungs," by Dr. T. W. Peers; and "Pneumonia," by Dr. J. H. Cannon. (See this number of journal.)

In the discussion following, Dr. R. E. McVey said: "So far as I know, croupous and broncho-pneumonia are very different diseases—the one being a constitutional while the other is a local disease. In the treatment of croupous pneumonia we should know something of its pathology. It may be a germ disease, but if so, I do not understand why it should be confined to one lung. It is an acute, general, infectious disease. There is a vaso-motor paresis, and as a result too much blood in the lung. The causative factor in the vaso-motor change is an alteration in the character of the blood, which may be due to a germ, but this has not been definitely established. Formerly it was the custom to bleed to relieve the engorgement, later it was found that by producing a general vaso-motor paresis the larger bloodvessels were filled and the engorgement relieved in the lungs, and for this purpose veratrum was used. When there is consolidation of the lung, we use digitalis to stimulate the heart. Quinine may abort a pneumonia in the initial stage if given in large doses. I would not use it in the stage of consolidation. Stimulants are valuable and indicated in certain conditions.

Dr. Alkire.—"When I have a case of pneumonia I want to be sure in the first place that it is a case of pneumonia, and then whether it is croupous or broncho. It is a difficult matter to say at first which it is. I first consider what pathological changes are going on. The first stage is one of hyperæmia and this is the indication for treatment. We have a strong rapid pulse. We should relieve the force of the pulse and contract the dilated bloodvessels. For this purpose I use veratrum viride or large doses of quinine, or the two in combination. Fl. ext. ergot will also answer the same purpose by producing contraction of the non-striated

muscular fibers. In the later stages of pneumonia we have some depression; we then cease to give sedatives and quinine. If the heart is weak and irregular, we give alcohol and digitalis. Iodide of potassium is a valuable agent for producing absorption and hastening the process of resolution. If the expectoration is thick and tough, ammonia is indicated."

Dr. Minney.—"I prefer little medication and bathing instead of phenacetine. Quinine may be used occasionally. Unless remedies are used judiciously they are best not given at all."

Dr. Pelton.—"In regard to the pathology of broncho-pneumonia and croupous pneumonia, in the former the inflammation is confined to the bronchial membrane, not extending into the air cells. In croupous pneumonia the inflammation is outside of the air cells. In a congestion of the lung we have the vessels of the pulmonary artery involved. In inflammation we have the nutrient vessels involved and an exudation. The area of the air cells is diminished by the inflammation, and there is a consequent difficulty in the aeriation of the blood. In the early stage we should use arterial sedatives and reduce the amount of blood in the pulmonary circulation. In the later stages, where there is a tendency to increase of fibrin and coagulation, I would use carbonate of ammonia instead of alcohol. Quinine may be used in small doses. We do not find all the trouble in the lung. The vaso-motor centers are affected first by the germ or microbe entering the blood. There is an indication for nerve stimulants."

Dr. Stewart.—"We should take into consideration the anatomy and physiology in all cases. The danger is greatest in children on account of the hypostatic congestion, and attention should be given to the position of the patient and changes should be frequently made. A patient with pneumonia is depressed from the beginning, and the high temperature and quick pulse do not indicate arterial sedatives. These agents are likely to do harm to our already depressed patient. They should be supported all the way through, and if aconite and veratrum viride or phenacetine or antipyretics be given they should be most carefully watched. I have had better results by keeping up the nutrition from the first. Quinine in large doses meets with the same objection as the arterial sedatives, veratrum veride and aconite, and also disturbs the stomach."

Dr. Powell, referring to the diagnostic points spoken of in the paper: "We are taught that crepitant rales are only heard in the beginning of pneumonia and not after consolidation has taken place, and they are only heard in croupous pneumonia."

Dr. Magee.—"Recent writers of to-day are paying more attention to the microbic origin of pneumonia. The diplococci, which are lozenge-shaped, are so-called because they occur in pairs. They can be cultivated and immunity established by injection. The serum of animals, which have been rendered immune, if injected into patients will cut short the disease. The immunity, however, only remains for a short period. There is one point in regard to the microbic origin of pneumonia which is mysterious. The period of incubation is not known and this seems to be a stumbling block in the way of the germ theory."

Dr. McCrea.—"Dr. Welsh mentions that the cocci occur in pairs, which he claims to be diagnostic. He also claims that it is easy to cultivate them. He considers it more difficult to diagnose the pneumococcus from the streptococcus than any other."

Dr. Schenck.—"Each case needs to be diagnosed as a whole. Each stage has its own treatment. We have obstruction of the lung and the heart vainly beating to force blood into the lung for oxidation, and as a result a tendency to heart failure. The heart beats forcibly, but the pulse is weak. In such a condition blood-letting is valuable. Veratrum viride lessens the force of the heart and is one of our best agents. Jacket poultices and bathing are also to be recommended. Carbonate of ammonia is a favorite in all stages."

Dr. Hamilton.—"I believe in the first stage of pneumonia that aconite is indicated. Poultices, if properly used, are valuable. Painting with iodine is also a good idea.

Opiates are valuable in relieving the reflex irritability."

Dr. R. E. McVey.—"I want to say that during the period of consolidation I would use liquifacients. The condition of the patient should indicate the treatment in all stages."

Dr. Righter.—"In regard to alcoholics, I want to say that I never pay any attention to them unless the patient has been accustomed to the use of alcohol. In these cases alcohol is invaluable."

Dr. W. E. McVey.—"I do not consider the auscultatory signs of very great importance in the diagnosis of pneumonia. We are very seldom able to hear the crepitant rale, and it is very difficult to tell the crepitant from the subcrepitant rale by any difference in sound. Dr. Leaming, formerly professor of diseases of the chest and physical diagnosis in the New York Polyclinic, has pretty clearly demonstrated that the crepitant rale cannot be produced by the method usually given. Physiologists teach us that the tidal air does not enter the finer divisions of the bronchial tubes, but that the lungs receive oxygen by diffusion of gases. There is no current of air in the true respiratory portion of the lung. The air cells are not emptied at every expiration, but remain full, and their distention only slightly increased by inspiration. If these facts be true, it would hardly be possible for a collapse and adhesion of the air cells to take place at this stage of the disease. Dr. Leaming prefers to consider the crepitant rale as being interplural in origin. I think the main points in the treatment of pneumonia are to keep the temperature down, support the heart and keep up the nutrition of the patient."

Dr. Rodgers.—"I think poultices are good, but I don't always use them because the patient is more likely to take cold. We can bathe a pneumonic patient as well as a fever patient. In case of a flagging heart, ammonia, nitro-glycerine, etc., are better than alcohol. Open the pores of the skin and use heart stimulants."

Dr. Peers.—"In one of the hospitals of New York they are using the cold baths with good results."

Dr. Cannon.—"A recent writer on pneumonia claims to abort it by the use of an ice bag on the chest. I have used phenacetine a number of times with no bad results. I do not think it is a heart depressant. It quiets the little nerve pains.

Dr. S. G. Stewart presented some pathological specimens and reported a case of tubal pregnancy.

Society adjourned to meet second Monday in May. W. E. McVEY, M.D.,
Secretary.

The Golden Belt Medical Society.

The Golden Belt Medical Society met in annual session in the office of Dr. E. B. LaFever, in Abilene, April 6, 1893.

In the absence of the president, Dr. Gunn, vice-president Felty assumed the chair.

The minutes of the last meeting were read, to which one or two minor corrections were made, and then approved.

The following members were present: Drs. J. W. Felty, H. B. Felty, King, Austen, Hodge, LaFever, Dewees, W. S. Harvey, Cloud, Murphy, Sutherland, Brewer, McClintock, Sheldon, Curtis and Robb.

The visiting gentlemen were Dr. Steelsmith and the Messrs. Neptune.

On motion of Dr. Dewees, all visiting brethren were given the privilege of the floor.

Applications for active membership were received from Dr. H. W. Sutherland, of Herington, and Dr. Joseph W. Robb, of Russel, Kansas, and referred to committee on elections. The latter reporting favorably, a motion to suspend the rules and instruct the secretary to cast a ballot was made, seconded and carried.

Dr. LaFever presented the name of Dr. Hal C. Wyman, of Detroit, Michigan, for election to honorary membership. Motion to elect by acclamation made, seconded and carried. Election unanimous. The chair thereupon appointed Dr. LaFever a com-

mittee of one to notify Dr. Wyman of his election.

The election of officers for the ensuing year resulted as follows:

President.—Dr. J. W. Felty, of Abilene.

First vice-president.—Dr. L. H. Murphy, of Minneapolis.

Second vice-president.—Dr. J. W. Robb, of Russel.

Secretary and treasurer.—Dr. E. B. LaFever, of Abilene.

On motion of Dr. Sheldon, the president was instructed to ascertain the names of members wishing to attend and act as delegates to the Kansas State and American Medical Associations, and from those names select such number of delegates as the society is entitled to.

Upon inquiry, the following members signified their desire to go and act in such capacity: Drs. Harvey, Curtis, Brewer, Dewees, Felty, Murphy, Daugherty, Sheldon, Hazlett and LaFever.

On motion of Dr. Sheldon, the president was given till next meeting to report his appointment of the regular committees for the ensuing year.

On motion, the president was instructed to correspond with ex-treasurer Kauffman, requesting the remittance of funds due the society still in his hands.

A telegram was received from the president, Dr. Gunn, expressing his regards to the society and regrets at his inability to be present.

The president-elect announced the names of Drs. Hazlett, Daugherty and LaFever as committee on publication for the ensuing year.

The following papers were presented, read, accepted and referred to the committee on publication:

TYPHLITIS WITH IMPACTION OF CÆCUM.—REPORT OF CASE.

BY WM. B. DEWEES, M.D., SALINA, KANSAS.

Mr. President and Fellows: The case of which I desire to make a report before this society is one of supreme moment to me and I trust of sufficient interest to merit your attention and full discussion.

My own and only daughter, a well-developed, healthful, active, intelligent and affectionate blonde of nine summers, manifested her first indisposition on Sunday evening, February 12, when she returned home after a bicycle ride with her companions, complaining of pain in her abdomen. My wife urged her to retire, and she soon fell asleep after going to bed, and rested well all night. On Monday morning she awoke without pain, arose, dressed herself and took her breakfast as usual. When I came home for dinner my wife stated that Katie began complaining of pain in her abdomen shortly after my departure after breakfast, and that she had kept her from going to school. I immediately made an examination and found a decided circumscribed and hard swelling in the region of the cæcum, very painful to the touch. Pulse 120, temperature 101; tongue clean, no tympanitis, no action from bowels for about thirty-six hours, considerable thirst and nausea.

I diagnosed a complication of typhlitis with impaction of cæcum, and immediately prescribed one ounce of sulphite of magnesia, dissolved in two ounces of cinnamon water, directing a tablespoonful to be administered every half hour. Hot flannel cloths were constantly applied externally over the seat of suffering, and four hours later I filled the entire colon with hot water, containing a little salt. This, together with gentle massage over the cæcum, soon caused the hard swelling to give way, when the child was requested to allow the water to escape, which was followed by instant relief. Several evacuations followed in short succession, when the child expressed herself feeling well. A close inspection of the dejections revealed the fact that the lavage of the colon had brought away a number of very hard scybala, which, upon being broken asunder, revealed corn imbedded in the masses. A careful inquiry disclosed the fact that the corn was eaten on Saturday afternoon, February 11, in the form of "popcorn," served with the refreshments at a birthday party of one of her little friends, which she attended. Both the swelling and

pain in the region of the cæcum having passed away, the temperature and the pulse became normal, and she rested well till Tuesday morning, February 14, when she complained of some colicy pains in the left inguinal region with a desire to go to stool. Several attempts at defecation failing to accomplish the purpose, I resorted to an enema, which brought away several more hard scybala, followed by normal fæces. Some pain and tenesmus continued afterward, which, however, yielded happily to deoderized tincture of opium. The temperature and pulse remaining normal. She was kept in the recumbent posture during the entire week, to give her the benefit of all doubt, though she was comfortable and suffered but little, hence no other medication was resorted to. Thus the time passed till Monday morning, February 20, when she spoke about going to school, but thinking it best to allow her a few more days of rest, advised her not to go. Shortly after, at about 8:30 o'clock that morning, she was suddenly seized with a most violent, agonizing attack of pain in the lower abdomen, a little to the right of the linea alba, which yielded only to one-eighth grain of morphine with 1-200 of atropine hypodermatically. Turpentine and camphor were applied over the abdomen on flannel cloths and she fell asleep and slept for almost three hours, when she awoke and said to her mother that she was feeling good. At 1 o'clock I returned home for my dinner, when she told me how good she slept and how well she felt. I found her temperature and pulse still normal, no tympanitis, no pain, tongue clear, all of which satisfied me that the child was doing well. Returning for supper at 6 o'clock, I found her suffering a little from nausea, with the information that she had vomited about an hour before. Satisfying my mind that this was due to the after-effects of the morphine given in the morning. Aside from the nausea she was free from suffering, temperature, pulse and tongue normal till about 8 o'clock, when she suddenly vomited a black fluid, followed with cold hands and feet, sinking pulse and collapse. Dr. E. R. Switzer was again quickly summoned, but all efforts proving in vain; she continued sinking till 2 o'clock Tuesday morning, when she expired. No post-mortem was made. Such, gentlemen, is the report of what proved to me a very interesting case. Was the diagnosis and treatment faulty? Did the girl die from perforation of the appendix or cæcum, or from any other cause? Would the surgeon have been justified at any time during her illness to make even an exploratory laparotomy? If so, when was this the most strongly indicated?

DISCUSSION.

Dr. Brewer thinks treatment of case all right, and all was done that could have been under the circumstances. Does not believe operative procedure justified at any time. Could not conceive a peritonitis without fever and increased pulse rate.

Dr. King inquired if there was any soreness or pain on pressure at any time; to which Dr. Dewees replied that there was only at one time, and that was completely relieved by one-eighth grain morphia, hypodermatically. He afterwards looked upon the child as well.

Dr. Felty did not believe in all cases that it was necessary to amputate the appendix when this latter organ was diseased. Had seen several cases in which a part of the appendix was gangrenous; the part affected was simply pinched off and thrown back into the abnominal cavity after washing the cavity out and cleaning the parts thoroughly. Lymph was thrown out around the diseased parts, affecting a permanent protection from infection. Cited a case of amputation by nature, resulting in complete cure.

Dr. Sutherland reported a case of appendicitis in which he could not gain the consent of the patient to operate. After a time lymph was thrown out, forming adhesions to the surrounding parts, effectively protecting the individual from further trouble; but the newly-formed tissue contracting produced a pulling sensation, accompanied by more or less pain, which has existed ever since. He believes this patient to still have the parts diseased, and it may be necessary to operate at some time in the future.

Dr. King cited two cases, occurring in his practice, where disease was produced by the eating of large quantities of pop-corn; both cases occurring in young children and both promptly proving fatal.

Dr. LaFever believed this case to belong to a class of obscure cases occurring as a result of the ingestion of some substance which may or may not in and of itself act as a poison. Mentioned the Snook-Herr poisoning cases, so-called, caused by the eating of ice cream at a wedding dinner in Louisville, Ky., in which a large number were poisoned, several deaths, including the groom, resulting. Called attention to the fact of a cause in this class of cases not generally considered, in which poisoning might ensue, ending in death, from the swallowing of ptomaines. It is not difficult to imagine, from the knowledge we now possess of the life and growth of micro-organisms, how we may readily take into the stomach a sufficient amount of their poisonous excreta to result in death. Poisoning in this manner has occurred most frequently, probably from the ingestion of milk either as milk or as ice cream, because of this agent offering such an excellent culture soil for the growth and rapid development of pathogenic micro-organisms. This method of poisoning should always be borne in mind when any obscure or suspicious case occurs, for by failure to recognize the cause and to promptly apply the proper remedial agents a life may be sacrificed.

Dr. Curtis saw two cases of ptomaine poisoning where shock and pain was very great. By the prompt use of cathartics, followed by the liberal use of opium, recovery in both cases took place.

Dr. J. T. Curtis, of Dwight, read a paper on "Cystitis," in which in a very able and scholarly manner he reviewed the entire subject, giving the latest researches and opinions to date.

DISCUSSION.

Dr. Dewees thought the essayist had so completely covered the ground that there was little left to be said. "There are a large number of cases of cystitis which can only be relieved, when no cause is known, by dilatation. Use as a general rule hot water, but as all cases differ, thinks much judgment is required in order to obtain the best results." When ulceration is present and can be demonstrated, has found the local application of nitrate of silver (10 to 20 grains to ℥ i) as recommended by Goulet to be the most useful. By way of internal medication relies principally upon equal parts of the oils of eucalyptus, turpentine and gaultheria; best given in capsules.

Dr. Brewer reported a case of cystitis, complicated by a prostate enlargement to the size of a fist. When called, found patient with considerable fever and a bladder distended to the umbilicus. Was unable to pass catheter, and compelled to aspirate. At the end of a week was recalled. Found patient was having a temperature ranging from 99 to 101°, and suffering considerable pain. Performed supra-pubic cystotomy, removing the prostate, and washing out the bladder with boracic acid solution and tying in a silver tube for drainage. Patient made a nice and complete recovery, but subsequently died of tuberculosis. As there is no specific, the doctor does not confine himself to any one remedy, but selects the one his best judgment dictates for the particular case under observation finds the internal administration of large doses of potassium acetate of much value. Asked Dr. Dewees for a more detailed mode of making local applications of silver nitrate to the diseased parts; to which Dr. Dewees replied that there had been suggested several ways by which it might be accomplished. Said the one he used was to connect a glass tube to a rubber catheter, having at the other end a rubber bulb. This apparatus he fills with the solution and carries the tube in until the diseased part is reached, using great care that none of the solution escapes until the tube has reached the proper point. He accomplished this latter purpose by holding the entire apparatus on a level with the organ. After insertion, by gentle pressure upon the bulb, about ten minims are injected. Some practice is required in order

to inject the amount desired. After a few trials with the apparatus, one can pretty nearly determine by the amount of pressure exerted upon the bulb the quantity ejected. Gould was the first to suggest this method of treatment, and used a special syringe for the purpose.

Dr. McClintock could not add anything to what had already been said as regards treatment, but wished to say something upon one or two points in the diagnosis of vesical diseases: "When the diagnosis is in doubt, examination with the aid of the cystoscope is sometimes of great value. If the conditions are favorable for cystoscopy, nearly the whole of the bladder interior may be brought into view by patient and careful manipulation of the instrument. When pus or blood are present to the extent of rendering the contained or injected fluids turbid, nothing of value may then be determined. Besides this condition there are many cases in which it cannot be used." Does not believe the cystoscope will ever come into general use because of its expensiveness and the difficulty of its manipulation. "When the diagnosis is in question, and the disease does not yield to treatment, we are perfectly justified in making a cystotomy, in order to clear up the cause; and if the cause be removable, proceed to its accomplishment." The doctor ended by demonstrating the principle of the cystoscope and method of using it.

Dr. LaFever explained that it was only in those cases of cystitis, due to causes other than of bacterial origin, or in the cases do to the action of germs, where the microbe would by their nature inhabit only the upper layers of the epithelium, that nitrate of silver could exert any curative effect, for the reason that this agent did not have the power to penetrate deeply into the membrane and reach any germs therein embedded, as the gonnococcus did. Nitrate of silver probably does not act upon the germ directly, but produces its curative influence by coagulating the albumen of the tissues and thereby cutting off the nutrition of the microbe."

Dr. Robb finds that in many cases of cystitis chloral is of great utility in allaying irritability, thereby giving comfort and sleep to the individual affected, and in this manner was productive of good.

Dr. Sheldon.—"It is always well in these cases to keep a careful watch upon the urine. any abnormalities arising must be corrected." Salol in large doses has given him very good results. Has also seen excellent results from the use of benzoic acid. Salol is probably decomposed in the blood and acts as an antiseptic. Related a case in which he intended to operate, but was prevented by cure resulting from the above-mentioned drugs. "Hunter McGuire has shown us that in obstinate cases, where all other remedies fail, operative procedures yield promising results." Thinks the cystoscope of much value in some cases.

Dr. Felty has seen very excellent results from use of creolin injections and drainage through perineal section.

Dr. Sheldon.—"Dr. Felty, would not perineal section be objectionable by rendering the individual impotent?"

Dr. Felty.—"I have seen the most eminent surgeons in the country make perineal section after a supra-pubic cystotomy for purposes of drainage."

Dr. Curtis closed by saying that he had used salol with quite a good deal of success. Related the case of a young lady suffering from cystitis, which, upon examination, a hair-pin was found in the bladder, upon the removal of which a complete recovery ensued. The steel had been foolishly poked into the urethra and escaped into the bladder, and had remained for quite a length of time before examination could be obtained, and until the disease had rendered the patient almost a physical wreck.

Dr. McClintock next read a paper, entitled "Tuberculosis of the Cervical Glands."

The essayist showed a thorough knowledge of as well as a considerable experience in this class of troubles. The paper was written in the author's peculiarly-happy style, and was throughout ripe, rich and full of good suggestions.

DISCUSSION.

Dr. Sheldon thought the writer did not dwell sufficiently on the constitutional treat-

ment of tubercular glands. "It is the tissues of low vitality that are more particularly attacked by the tubercle bacilli, and not those of good nutrition." Thought it as important that in tuberculosis of the cervical glands the patient should be given the same careful, general, hygienic and climatic treatment as was resorted to in tuberculosis of the lungs or other tissue of the body; and in this way create as great a resistance to the germ growth as possible. This is a very important subject and should be thoroughly discussed.

Dr. LaFevre called attention to the fact that in latent tuberculosis the bronchial glands were the most frequent hiding place for the tubercular micro-organisms, and that in patients suffering from some indefinite disorder with a slight rise of temperature and malaise, if there be present slight enlargement of the cervical glands which generally begins low down about the root of the neck, it is of very great significance, it being sometimes the very first definite symptom of beginning spreading tuberculosis.

Dr. Felty.—"Dr. White, of Philadelphia, reports forty or fifty cases of glandular tuberculosis cured by the injection of the diseased glands with iodoform (grs. ij) in glycerine (gtts. vj) and has removed whole chains of glands in this manner, and without resort to other operative procedure." Claims there is no danger from iodoform poisoning, the pyogenic membrane preventing its absorption with sufficient rapidity to produce toxic effect.

Dr. Cloud.—"Is iodoform a germicide? If not, how do you explain its beneficial action?"

Dr. McClintock.—"Iodoform enters into chemical composition with the ptomaines present, as well as with those constantly secreted by the germs, thereby rendering them incapable of harm."

Dr. Sheldon would ask the essayist why in so many cases did tubercular disease, starting in a certain tissue, confine itself to that particular tissue and not become general.

Dr. McClintock believes a great many cases diagnosed as such were not tubercular, but syphilitic, or it may be Hodgkin's disease, etc. Thinks general tuberculosis must certainly be very rare.

Dr. Brewer made an autopsy upon a case at one time in which no tissue could be found to be free from tubercular disease. This is the only case of really general tuberculosis he had ever seen.

Dr. LaFever presented a paper on the "Chemical Methods used in Gastric Disorders," in which he reviewed the various tests ordinarily employed in examination of the gastric functions.

On motion, Dr. LaFevre was given time to make before the society some of the tests for which he was prepared and which he had described previously in the paper.

He then showed the methyl-violet reaction for acid and Boas' test for HCl. One of the members consenting, a three-grain capsule of potassium iodide was exhibited to him to show the method of determining the absorptive power of the stomach. After the lapse of six minutes the saliva was tested by means of starch paper, simply moistened with the saliva and the wet paper touched with a glass rod dipped into fuming HNO_3. This was repeated every minute until the ninth; on applying the acid at the ninth minute, a bluish coloration was shown—the characteristic test for iodine.

Dr. Brewer read a paper on the "Etiology and Treatment of Summer Diarrhœa of Children."

The author called attention to the main points producing this condition, and discussed its general therapeutic management.

DISCUSSION.

Dr. Sheldon thinks one paper cannot cover the ground. Does not believe the author to be specific enough in his treatment. Believes feeding is of the greatest importance. Mother's milk being oftentimes indigested, a change to cow's milk results in benefit. Thinks it better sterilized; also likes predigested foods in these cases. "Cow's milk contains too much fat and should be diluted and have sugar added. In regard to treatment, first remove all irritating substances." Gives opium only by

rectum. Makes use of high injections in these cases.

Dr. Brewer employs wet pack in all cases when temperature reaches 103°. Wraps child up in wet sheet, allowing it to remain until temperature is reduced. Uses pack every three or four hours if necessary to control fever.

On motion of Dr. Kechersid, Herington was chosen as the next place of meeting.

Dr. Sheldon moved to adjourn. Carried.

Respectfully,

E. B. LAFEVRE, M.D.,
Secretary.

THE recent references in medical journals as to the uses of iodoform in tuberculous joint affections reminds us of how a remedy may suddenly become popular by enthusiastic recommendation and as suddenly become unpopular by enthusiasm directed to its condemnation, and carried to such an extent as to almost drive a useful remedy from a place in our therapeutics. Dr. George Woolsey, of the *New York* (N. Y.) *Medical Journal*, gives the method of its preparation for injection and the indications for its use in tubercular diseases. He uses a sterilized, freshly-prepared emulsion in glycerine of a strength varying from five to twenty per cent., and injects with a large hypodermic needle after taking proper antiseptic precautions. Abscesses are evacuated, cavity washed out with Thiersch solution and moderately filled with the emulsion, and this process repeated in from two to four weeks. In suppurative joints the injection is carried into the cavity of the fungus joint and distributed by passive motion. In fistula parenchymatous injections are better than injections into the lumen. It is used also in tuberculous joint disease without abscess, tubercular epididymitis, tuberculosis of the bladder, tubercular lymphadenitis and empyemia. Iodoform poisoning is seldom noticed. There is usually a slight rise of temperature—one-half to one degree. The first effect of the injection is slight pain for a short time.

Kansas Medical Journal.

PUBLISHED MONTHLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per annum, in advance..... $2 00
Single copies..... 25 cents

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in Registered Letter. Address

DR. W. E. McVEY, PUBLISHER,
723 Kansas Avenue.

Editor-in-Chief:
J. E. MINNEY, A.M., M.D., Topeka, Kas.

Associates:
W. L. SCHENCK, A.M., M.D., Topeka, Kas.
S. G. STEWART, M.D., Topeka, Kas.
D. F. RODGERS, M.D., Topeka, Kas.
J. C. McCLINTOCK, A.M., M.D., Topeka, Kas.
M. B. WARD, A.M., M.D., Topeka, Kas.
J. P. LEWIS, M.D., Topeka, Kas.
W. E. McVEY, B.S., M.D., Topeka, Kas.

TOPEKA, KANSAS, MAY, 1893.

SOME changes have recently been made in the working force of our editorial department, and we anticipate with our increased force to add much to the merits of the journal. A department of Surgery under the supervision of Drs. D. F. Rodgers and J. C. McClintock, a department of Gynecology under the management of Drs. M. B. Ward and J. P. Lewis, General Medicine by Drs. W. L. Schenck and S. G. Stewart, Books and New Remedies by Dr. W. E. McVey, are some of the features which have been arranged for.

We hope by thus dividing the work that we may keep our readers well posted upon the current advance in each department, and more fully merit the interest the profession of the west have taken in us and our work.

Reports of society meetings throughout the state are earnestly solicited, and when possible to do so we will be on hand to take the report. Contributions to any of the departments are most gratefully received.

The Examination and Treatment of Chronic Cases of Urethritis.

The importance of an endoscopic examination of the urethra is not sufficiently recognized.

Cases of chronic gonorrhœa are frequently allowed to drift along month after month without an intelligent effort on the part of the attendant to make a diagnosis of the exact pathological lesion present, and to treat the case accordingly. On the contrary, a general diagnosis of gleet is made and the patient is treated by injections and internal remedies until he rebels, and is then examined for stricture; and this, if found, is treated; if not, sounds are passed regularly. The great majority of such cases, after going through the hands of several physicians, do get well. Other cases refuse to go on to a recovery and fall into the hands of a specialist, who for the first time passes an endoscope in the case and attempts a diagnosis. The instrument chosen is usually as large as can be passed, say a No. 28 French scale. The meatus enlarged if necessary. The instrument should be of pure silver, about four and one-half inches in length, with a hard rubber disc on the distal end. This can be passed into the prostatic urethra with a little patience and intelligence. It should be gently and carefully done, and passed to this depth does give some pain to the patient. Cocaine should not be used in the first examination as it changes the condition of the bloodvessels. Some operators advise first passing sound to accustom the urethra to the foreign body. In the majority of the cases, however, the disease is located in the pendulus portion of the urethra, and at the first examination the endoscope should be inserted only to the membranous portion. The obturator is then withdrawn, and after some practice the endoscopic picture is easily read and diseased portion of the membrane treated as the instrument is withdrawn. Should the physician still be in doubt, the urethral speculum of Tuttle, aided by his urethral mirror, will be of advantage in making a diagnosis in the anterior urethra. Should there be no lesion in the anterior urethra, then at the next sitting the deep urethra should be examined, paying particular attention to the condition of the mouths of the glands of Margagni as the instrument is withdrawn. If an ulcer is found it should be treated preferably by the application of a solution of nitrate of silver, usually two per cent., but varied in different cases. Patches of largely-dilated vessels, the so-called granulations, should be treated by stronger solutions, or better, by being touched by the galvano-cautery. Discolored points are best treated by local applications of Lugol's solution of iodine.

Every physician dealing with the chronic cases of urethritis should provide himself with the instruments for their proper examination and treatment.

Chicago's Water Supply.

The commission sent out by the London *Lancet* to investigate the purity of the Chicago drinking water have made their report. Nothing of great importance, especially for the American people, seems to have resulted from the investigation.

Several chemical analyses were made and the water found to be wholesome, though they report a probable danger from the sewage dumping, which is still in practice. They recommend that the water be boiled and filtered before being used, and their greatest source of alarm seems to be from the prevalent habit of using ice in drinking water.

The danger from contamination by the use of ice can be easily gotten rid of, if a good article of manufactured ice be used.

The *Lancet* report may satisfy the minds of many of us who have been, perhaps needlessly, alarmed by the horrible condition of the Chicago water supply as portrayed by some eastern journals.

There can certainly be no question as to the importance of the subject to a large mass of the people of this and other countries, and we consider the action of the *Lancet* a wise and timely one.

Lumbago.

Lumbago is generally considered to be of rheumatic origin. The probability is that its cause is unknown.

The disease seems to be more nearly allied to neuralgia than to rheumatism, and to be in the nerves distributed to the muscles.

In a depressed condition of the blood-vessels distributed to the muscles, from various causes, an ischæmia takes place in those vessels and the nerves supplied by them are deprived of their normal stimulant and food, and are in a temporary state of anæmia.

Some pathologists attribute the disease to accumulation of uric acid in the pelvis of the kidney, but the uric acid treatment does not bear this theory out.

The most successful treatment in this climate is the sulphate of quinine, because it equalizes the circulation and possibly there is a malarial element which is overcome.

Four grains of quinine every four hours for three or four days usually relieves the trouble. One-tenth of a grain of calomel, given every four hours until the bowels are thoroughly relaxed, is beneficial when the disease proves obstinate. The calomel in such sized doses acts as a stimulant to the secretory and excretory organs. In chronic lumbago, that is, of two or three years' standing, Warner's salicylic acid compound, which contains salicylic acid, tincture of gelsemium, cemicifuga and iodide of potassium, is an excellent remedy. It does not produce nausea nor depression of the circulation as the salicylic acid does alone or in combination with bicarbonate of soda.

One teaspoonful of Warner's compound should be given three times a day in a little water just after meals.

One four-grain dose of quinine at bed-hour with the foregoing treatment is required in some of these cases.

The above treatment has succeeded admirably in some very obstinate cases of lumbago.

SUBSCRIBE for the journal.

Neuralgia.

Neuralgia is a symptom and not a disease. It indicates an impoverished condition of the trunk of the nerve or the nerve center. An impoverished condition of the nerve is induced by a disturbance in its blood supply.

The peripheral nerves being distributed to the surface of the body, their circulation may be affected by slight changes in temperature or atmospheric pressure. This is evinced by exposure of an arm from under the covers during the night, or a draught of air on an exposed part of the body for a time is liable to bring on neuralgia the next day or severe cold.

Some forms of neuralgia are toxæmic. Ptomaines and leucomaines pass through the liver and enter the blood stream, and irritate the nerve structures in their centers, and neuralgia is the result—toxine neuralgia.

Another constitutional form is caused from defective food supply to the blood. The food may be taken into the stomach, but not being properly prepared by stomach and intestinal digestion, when it is thrown into the circulation it will not be appropriated by the tissues. The elements destined for the nerve food are diverted to some other channel through this imperfect metamorphosis.

The treatment is through improved nutrition. Here the chemistry of nutrition must be studied. Each case is a law unto itself. The fault is often in the albuminoids not being assimilated. This is shown by local expressions of pain. In fleshy, anæmic, neuralgic patients the probability is they eat too much of the carbohydrates and an insufficient amount of the albuminoids. Such patients should have the latter increased and the former diminished.

TETANUS in a child was treated by Celli with nine hypodermic injections, each containing five centigrams of corrosive sublimate. At the end of a week the child was well.

Homeopathy and the World's Fair.

The homeopaths are going to the World's Fair. In New York they propose to go through the records of vital statistics and obtain the ratio of mortality under homeopathic treatment as compared with that under regular treatment. Should they find the result of their investigations favorable, it is their intention to use it as an advertising card at the World's Fair.

It is hard to imagine what effect such a report could have, and its absurdity is quite manifest upon even slight consideration.

Unless they have some means to show the number of cases treated by each method, the number of deaths recorded can certainly prove nothing for the merits of either school. It is not the number, but the per cent., of deaths which counts for or against any method of treatment.

DRS. PARISH and A. M. PHELPS, of New York, during the past year have made operations for tendon anastomosis in cases of infantile paralysis with success. In Dr. Parish's case the tendon of the paralyzed extensor pollicis was joined to the tendon of the healthy anterior tibial muscle. In Dr. Phelps' case the tendon of the paralyzed gastrocnemeus and soleus was joined to the healthy long flexor of the toes. The junction was made with cat-gut sutures and the wounds closed without drainage. In both cases a marked gain was made in the use of limb.

ANTIPYRIN, acetanelid and similar compounds should be given very cautiously for the relief of pain in persons about to be exposed to cold; not that they reduce normal bodily temperature, for it has been shown that they do not, but because of their influence are capable of decreasing the production of animal heat by rendering the vaso-motor system less active in adjusting itself to the circumstances with which it is surrounded.

ULTSMAN diagnoses vesical from renal hemorrhage by washing out the bladder, then injecting twelve and a half ounces of a one and one-half per cent. solution of iodide of potassium. In fifteen minutes he examines the saliva for iodine. If it is found there must be epithelial defects in the bladder, *i. e.*, the hemorrhage as well as the absorption must have taken place in the bladder, as intact vesical mucous membrane is not capable of absorption.

FROM recent reprints received, in which the subject of surgical treatment of cancer of the rectum is discussed by two men, eminent in rectal surgery, it appears that while colotomy is the permissible procedure in the vast majority of cases, excision is the ideal operation. When the cancer is within easy access through the sphincter, *i. e.*, not more than three inches above, and has not extensively infiltrated the adjacent tissues.

SURGICAL tuberculosis and lupus are treated by Landerer with cinnamic acid, one part; cocaine hydrochl., one part; alcohol, twenty parts. Of the above, one or two minims are injected about each nodule. The results were in forty-five cases: Thirty-one cured, seven improved, one not improved, and two deaths.

IN cardiac disease, where there is a relaxation of the vaso-motor system and digitalis has its characteristic effect on the heart without corresponding effect on the vaso-motor system, small doses of belladonna or atropine can be added with good effect.

CHLORIDE of ethel should be very cautiously used in producing local anæsthesia about the face, for should it be inhaled it is liable to produce alarming symptoms, such as lividity and difficult breathing. Over-freezing with it, too, will produce a dermititis.

DR. L. L. TERWILLIGER, of Lansing, Kansas, died April 15th from blood poisoning, which resulted from a prick received while dressing a gun-shot wound. The doctor was an active member of the local and state societies, and a man of ability and honor in his profession.

DR. A. H. CORDIER, of Kansas City, Mo., a formerly-of-Kansas surgeon, has devised a new knot-tier which overcomes, in a great measure, the formidable obstacles often met in attempting to tie vessels in parts inaccessible by ordinary methods.

ACCORDING to Mackie, half-drachm doses of paraldehyde, repeated every half-hour or hour, relieves spasmodic asthma successfully. Usually from one to three doses relieves, and the patient soon falls to sleep.

FATTY tissues, liable to pressure or irritation, should always be removed in surgical procedures, as its necrosis frequently causes persistent fistulæ.

The Kansas Medical Society.

The twenty-seventh annual meeting of the Kansas Medical Society will be held in representative hall, Topeka, Kansas, May 10 to 13, 1893.

The first session will begin Wednesday evening at 8 o'clock.

The first evening and every morning thereafter will be devoted to the general business of the society. The balance of the time will be given to the reading of papers and discussion of same.

If possible, all papers will be read before the society. The chairman of each section will preside during the reading of papers in his section.

Discussion of papers will be limited to members of their respective sections.

PROGRAM.

WEDNESDAY EVENING.

Usual order of business.

Report of committee of arrangements.

Address of President *pro tem* C. H. Shriner, Galena, Kansas.

PROGRAM OF SECTIONS.

PRACTICE OF MEDICINE.

1. Legal Injustice to the Insane.—B. D. Eastman, M.D., Topeka, Kas.

2. A Paper.—W. S. Lindsay, M.D., Topeka, Kansas.

3. Paralytic Dementia, Report of Cases and Illustrations.—D. R. Pelton, M.D., Topeka, Kas.

SURGERY.

1. Address.—Chairman P. Dougherty, M.D., Junction City, Kas.

2. Fractures of the Lower Extremity of the Humerus—Their Prognosis and Treatment.—Geo. M. Gray, M.D., Kansas City, Kas.

3. The Modern Treatment of Fractures of the Patella, with Demonstration.—J. W. Felty, M.D., Abilene, Kas.

4. Fractures of the Femur with Delayed Union, with Report of Cases.—L. J. Lyman, M.D., Manhattan, Kas.

5. Foreign Bodies in the Air Passages.—M. D. Cloud, M.D., Junction City, Kas.

6. Some Symptoms of Injuries to Bones of the Skull.—Geo. Halley, Kansas City, Mo.

OPHTHALMOLOGY, RHINOLOGY, ETC.

1. Address.—Chairman W. E. McVey, M.D., Topeka, Kas.

2. Are Certain Conditions of the Turbinate Bodies Normal?—C. H. Guibor, M.D., Topeka, Kas.

3. Asthenopia.—A. C. Graves, M.D., Cherokee, Kas.

4. Should a Mydriatic be used in Refractive Cases, and what ones?—J. E. Minney, M.D., Topeka, Kas.

5. The Examination of Railway Employes for Vision Color-blindness and Hearing, and the Methods Employed.—G. A. Wall, M.D., Topeka, Kas.

6. A Paper.—D. F. Longenecker, M. D., Emporia, Kas.

7. The Physical Examination of a Patient prior to Operating on the Eye.—R. S. Magee, M.D., Topeka, Kas.

8. A Paper.—B. E. Fryer, M.D., Kansas City, Mo.

9. Cataract.—F. B. Tiffany, M.D., Kansas City, Mo.

10. A Paper.—W. C. Tyree, M.D., Kansas City, Mo.

Volunteer Papers.

Reports of Cases.

Invited Papers.

GYNECOLOGY.

1. Address—Resume of the Gynecological Surgery.—Chairman J. P. Lewis, M.D.

2. Rupture of the Uterus.—L. Reynolds, M.D., Horton, Kas.

3. Abdominal Hysterectomy and Hysteromyomectomy—Indications and Technique.—M. B. Ward, M.D., Topeka, Kas.

4. The Erect Posture for Gynecological Examinations.—W. B. Dewees, M.D., Salina, Kas.

5. Septic Conditions following Childbirth.—J. E. Oldham, M.D., Wichita, Kas.

6. Dysmenorrhœa and Relief.—Deborah K. Longshore, M.D., Topeka, Kas.

7. A Paper.—Geo. Emerson, M.D., Winfield, Kas.

8. Mastitis and its Treatment.—M. R. Mitchell, M.D., Topeka, Kas.

9. Difficulties Encountered in Abdominal and Pelvic Surgery—How to treat them.—A. H. Cordier, M.D., Kansas City, Mo.

10. Puerperal Peritonitis surgically considered.—J. W. Felty, Abilene, Kas.

Railroads in Kansas have been asked to make one and one-third fare for round trip on the usual certificate plan.

G. C. PURDUE, M.D.,
Secretary.

A Case.

BY S. G. STEWART, M.D., TOPEKA, KANSAS.

Mr. J. E. R., age fifty-seven, German American. Four years ago he began to fail in health, although his appetite was inordinate. This condition continued for one year, when he passed about one hundred feet of tapeworm.

During the year following the expulsion of the tapeworm, his health remained fairly good, but he never recovered entirely. About two years ago his health declined rapidly. He was examined by a number of physicians and different opinions were given as to the cause of health failure. He called on me April 14, 1893. The following symptoms presented:

Emaciation, marked hyperæsthesia of the whole body. He complained of pain in the right and left iliac regions and in the stomach. His stools were free and loose, and mixed with mucus. In fact, it proved to be intestinal catarrh. The patient was despondent and melancholic. The conjunctiva was muddy in appearance and the skin was sallow. Percussion showed slight contraction of the liver and fæcal masses in the intestines. The examination of the abdomen and intestines was made under anæsthetic (given by Dr. J. C. McClintock) because of the rigidity, tenderness and hyperæsthesia of the abdominal muscles.

After the manipulation of the abdominal walls there was no more tenderness or soreness complained of than before.

The next morning after the examination the patient was given a test breakfast and the contents of the stomach were withdrawn two hours after the food was taken, and examined. After the food was removed, measurement was made of the stomach, and it held six quarts of water without pain to the patient. Examination of the contents of the stomach showed the presence of free hydrochloric acid. While the presence of free hydrochloric acid does not preclude malignant disease, it is a factor against it.

The iodide test proved that absorption of the stomach was practically nil. The salol test showed intestinal absorption fairly good.

Diagnosis.—Atonic dilatation of the stomach with probable cirrhosis of liver. Mal-nutrition due to the above condition.

Prognosis.—For life good recovery. A fair degree of health may be enjoyed by strict diet, which should be in the main a

dry diet. The stomach should be washed out once a day to prevent abnormal fermentation and decomposition of the food.

Medicinal Treatment.—Strychnia, the digestive ferments as they may be indicated. Owing to the inactive state of the liver, fel bovis inspis.

Hygienic Measures.—Bathing, friction of entire body, passive exercise in the open air, in carriage, etc.

The dilatation of the stomach is permanent.

For convenience we herewith append the iodide test. Ten grains of iodide of potassium should be given in a capsule. The iodine will appear in the saliva in half an hour, as shown by the starch test paper in the saliva, turning it blue.

In the case reported the reaction did not take place at all. The salol test indicates the absorptive power of the intestines. Five grains of salol given will be detected in the urine within an hour after taken, as shown by the addition of a drop of the ferric chloride in the urine, giving the violet color reaction.

I was assisted in the examination of this case by Dr. J. C. McClintock, and he agreed with me in the diagnosis made.

Autopsy in a Case of Aneurism.

BY O. C. M'NARY, M.D., SOLDIERS' HOME, LEAVENWORTH, KANSAS.

On the eighth day of September, 1888, James M——, age forty-five, was admitted to the Hospital of the National Military Home, Leavenworth, Kansas, and at once came under my care. I diagnosed "aneurism of the ascending portion of the arch of the aorta."

In January following, I reported the case along with five others to the Leavenworth Medical Society, and again on July 8, 1890, I exhibited the case in a clinic before the Eastern Kansas Medical Society, together with a case of aneurism of the abdominal aorta. The case has also been seen by many physicians visiting the hospital at different times. On this account and also because many physicians when examining the case disagreed with me in diagnosis, I wish to make public the final results.

Patient died at 1:45 P. M., March 11, 1893. March 12, at 9:30 A. M., I held the autopsy. There were present Drs. Phillips and Lane, of Leavenworth City; Drs. McGill and Walsh, of the Home.

External inspection showed an emaciated body with rigor mortis complete; a tumor three inches in diameter, two inches to the right of the center of the sternum and in the situation of the third and fourth ribs.

On opening the chest and raising the sternum and costal cartilages, a tumor measuring six and one-half inches in its greatest diameter was found to the right of the median line, the center of the tumor resting about the situation of the third interspace. The lower lobe of the left lung was partially hepatized; the right lung was pushed upwards and outwards, and consolidated throughout the greater portion of its extent. On attempting to open the pericardium it was found to be entirely obliterated, the parietal and visceral portions being firmly adherent.

On examining the tumor, it was found to be an aneurism, originating from the right side of the ascending aorta, beginning about one inch above the semi-lunar valves and continuing up to and including part of the transverse portion of the arch. That portion of the aorta between the semi-lunar valves and the aneurism, and the portion of the arch between the aneurism and the descending aorta were also enlarged to two inches in diameter. Lying in the anterior part of the sack and partially agglutinated to the wall was a firm antimortem clot, measuring three inches in diameter and one-half inch in thickness. The capacity of the sac, exclusive of the enlarged portions of the vessel (above spoken of) was twenty-four (24) ounces.

The tumor had been so firmly adherent to the chest wall in front that its anterior wall was in reality the chest wall itself. The third and fourth ribs in this situation were almost entirely absorbed, so that in at-

tempting to separate the tumor from the chest wall it had been found impossible to do so and the anterior wall of the tumor had been cut away to the extent of three inches in diameter.

I have preserved the tumor together with the surrounding adherent parts.

Tubal Pregnancy.

A case reported to the Academy of Medicine and Surgery, May 10, 1893,

BY

S. G. STEWART, M.D., TOPEKA, KANSAS,

PROFESSOR OF THEORY AND PRACTICE IN THE KANSAS MEDICAL COLLEGE.

On Tuesday, March 30, about 4 P. M., I received an urgent summons to see Mrs. H——, aged about thirty-six years. I found her in profound collapse, pulseless at the wrist and heart beating feebly. She complained of sharp pain in the stomach and abdomen. The abdomen was distended and tympanitic.

Thinking she might have hemorrhage from miscarriage, although I had no history of pregnancy, I made a vaginal examination, but found no hemorrhage.

The patient seemed in "articulo mortis." I injected hot salt water into the colon and gave 1-100 grain of nitro-glycerine, and the pain being severe, gave ⅛ grain of morphia hypodermatically. She rallied somewhat, so that now the radial pulse could be felt. Desiring to know something more about the patient's previous history, I left her and called up Dr. J. C. McClintock, who knew the family history and had prescribed for her one or two weeks before this attack. Dr. McClintock told me that the patient was pregnant or gave a history to that effect, and he thought her about eight weeks advanced.

When I told him of the condition, he suggested that it might be a tubal pregnancy in which rupture of the tube had taken place. He hurried for his operating case and I hastened to my patient and found her dead. From the description given, her death took place soon after my departure from the house.

At my visit, when trying to make out the nature of the case, I found the bladder empty, and thought of those cases that die quickly from acute disease of the kidney supervening upon a chronic disease. Fortunately the family granted our request for an autopsy, the result of which I show you. The abdomen was filled with blood, and a fœtus about eight weeks old was found in the abdominal cavity. I show you the uterus, ovaries and tubes. In this right tube you see where the pregnancy took place; you also see the opening in the tube through which the fœtus passed into the abdominal cavity and through which the patient's life went out.

AN interesting contribution to our knowledge of the therapeutics of phenocoll and piperazine comes from South Africa. Dr. J. O. Ungerhausen, district surgeon of the Lion's River Division, writing from Houick, reports the very satisfactory results yielded by phenocoll hydrochloride in various cases of influenza and ordinary cold, when the mucous membrane of the upper respiratory passages was swollen and inflamed. The cold developed more rapidly and ran a milder course, headache being removed. A beneficial influence was also observed on the bodily temperature in several cases of diphtheria, when it was prescribed in combination with benzoate of soda. The same observer used phenocoll and piperazine in a few cases of gout; the results were unexpectedly successful, so that Dr. Ungerhausen expresses the opinion that this combination is more effective than any remedy hitherto proposed.

Physician Wanted.

A good physician can learn of a good location in a good part of Kansas by addressing Dr. S. W. Johnson, Admire, Kansas.

Recent Surgical Dressings.

During the past two years many local applications have been fully tested by American surgeons, but apart from Aristol and some of its combinations only one of them — Europhen — has been unreservedly received as a true topical remedy or a complete substitute for iodoform. Europhen has been pronounced an admirable dressing by all who have employed it. In burns of all degrees and of whatever extent it gives results that can be obtained by no other application. Ulcerations of all kinds are promptly healed by Europhen, and it is now largely employed under Europhen dressings, and there are few traumatisms in minor, major or general surgery in which Europhen cannot be employed to advantage. Europhen has the inestimable quality of adhering closely to wounds, over which the dusted powder readily forms an imprevious coating; hence it is the most convenient dressing for the use of the general practitioner, for it lightens his labor, as well as promptly comforts and soon cures his patient. In leg ulcer Europhen is said to be the best application known to medicine. It may be combined with aristol (equal parts) where hyperæsthesia is present. No toxic symptoms have yet been reported as following the use of Europhen. It is a more economical dressing than iodoform, as it will cover five times more wound surface than the latter.

An Epigram Confirmed.

Dr. W. E. Anthony, of Providence, R. I., writes as follows:

"When I was a medical student in 1865, I remember hearing Dr. Oliver Wendell Holmes, then Professor of Anatomy at Harvard College, say to his class: 'When you begin practice you will have twenty remedies for one d sease, but after twenty years you will have twenty diseases for one remidy.' That prediction seems to be fulfilled in the use of antikamnia, which seems to meet so many indication."

Prize Offer.

To the first five physicians supplying the missing word we will mail a magnifying, indestructible, self-registering fever thermometer, with certificate, in gold case with chain. RENZ & HENRY.

MALARIA — ACUTE OR CHRONIC.

Q. Doctor, from a liberal use of and consequently practical experience with Elixir Three Chlorides, R. & H., in what trouble have you found it to be of most value?

A. In selecting one out of many, I should mention malaria or diseases of malarial origin, in the treatment of which Three Chlorides, R. & H., have acted a most gratifying part.

Q. Do you use quinine in addition to the Chlorides?

A. Yes, often; but the exclusive of quinine is, to my mind, a most fatal and oft-repeated error. I know of few diseases which tend more rapidly and certainly to anæmia and impoverishment of the blood and consequent general debility than malaria. In this condition I ask no better alterative tonic and general blood-maker than Elixir Three Chlorides, R. & H.

Q. But what has that to do with its curing malaria?

A. Everything. To cure malaria means not only killing the malarial germs, but putting the debilitated and anæmia patient into such a condition as to resist repeated attacks or invasions of the same specific poison, *i. e.*, treatment both offensive and defensive. This the Three Chlorides, R. & H., from its ready assimilative and . . . effects, to say nothing of alterative and tonic action, will, in my opinion, most certainly accomplish.

Q. How and when do you use it?

A. In acute malaria I use it from beginning to end of treatment in connection with whatever else in the way of specifics I may find necessary. In chronic malaria it is invaluable, and I often use it alone and most successfully. Scientifically and practically it is an ideal remedy.

Caution.—Since establishing the fact that Elixir Three Chlorides, R. & H., is an exceedingly valuable alterative and tonic it has led to much silent substitution. Therefore kindly specify Renz & Henry's (R. & H.) to insure a prompt and progressive result—pleasant taste and avoid bad features.

A New Method of Medication.

The subject of the employment of animal extracts or tissues in the treatment of disease is exciting very general interest among physicians abroad and in this country.

The cosmopolitan professional circles of England and America are enthusing over the results already obtained with certain of these remedies.

In an article on "The Treatment of Myxœdema and Other Diseases by the Use of Certain Organic Extracts," Dr. Hector N. G. Mackenzie presents in the London *Lancet*, January 21, 1893, an interesting *resume* of the results he has already obtained with this method of medication.

Dr. W. A. Hammond also contributes to the *New York Medical Journal*, January 28, 1893, a paper under the title, "On Certain Organic Extracts: Their Preparation and Physiological and Therapeutical Effects."

To physicians interested in this new and promising method of relieving certain diseases hitherto unamenable to treatment by other means, Parke, Davis & Co. announce that they are ready to supply two of these medicaments: Desiccated Thyroids in powder, representing in permanent form the thyroid gland of the sheep; and Cerebrin, prepared after the formula of Dr. Wm. A. Hammond.

It is the purpose of this house, who are the first manufacturing chemists of this country, to place these remedies before the medical profession in an eligible form, and who will be pleased to send reprints of Dr. Mackenzie's and Dr. Hammond's articles and afford all desired information concerning the products now announced, to extend their line of this class of products as fast as experience justifies their therapeutical use.

Nearly a Specific for Diseases of the Genito-Urinary Organs.

I am well pleased with Sanmetto. I regard it as near a specific for diseases of the genito-urinary organs as any medicine I have ever used or known. I will ever recommend it in my practice, and hope that all who are in need of such a remedy may be able to procure Sanmetto.

W. G. CLENDENIN, M.D.,
Brazil, Tenn.

HYDROTHERAPY AT SARATOGA, by J. A. ERWIN, M.A., M.D. Published by the Cassell Publishing Co., New York.

While this work refers especially to the mineral waters of Saratoga and their therapeutical effects, its teachings are applicable to a large number of the mineral waters found in various parts of the country. With the increasing popularity of health resorts and the growing importance of mineral waters in the treatment of many of our chronic ailments, it is important that we should know something of the chemical composition and medicinal value of the different waters. One of the most important things, however, which the author suggests is that we should first appreciate the value of water—plain, every-day water. Perhaps to this may be attributed much of the beneficial effects of the mineral waters.

MODERN GYNECOLOGY—A TREATISE ON DISEASES OF WOMEN, by CHARLES H. BUSHONG, M.D., Assistant Gynecologist to the Demilt Dispensary, New York; Formerly Attending Physician to the Northern Dispensary; and Assistant to the Vanderbilt Clinic College of Physicians and Surgeons, New York. Published by E. B. Treat, 5 Cooper Union, New York. Price, $2.75.

This is a convenient, well-written work on the subject, and shows an appreciation of the purpose for which it was written. Each subject that is discussed is handled in a masterly manner. We can best show the

aim of the author by quoting from the introduction the following: "The number of books on the diseases of women is already large—so large that it may well be a question if the matter is not already overdone. A glance at the size and pretention of these works, however, will show that they are all written from one standpoint—that of the specialist. But what of the family physician, of the general practioner? What is being done for him? This query is especially appropriate for the man who graduated twenty, fifteen, ay, even ten years ago. When the facilities to-day offered in the best medical colleges for acquiring a knowledge of the diseases of women are compared with those these men had, can we wonder they feel unprepared for this class of work? When they seek to post themselves they are offered a book as large as the volume from which they studied the entire subject of 'Practice of Medicine' when a student. Is it surprising that busy men should feel their time inadequate for mastering so large a subject? Yet these men are the very ones who should know well the essentials of gynecology."

TUBERCULOSIS OF BONES AND JOINTS, by N. SENN, M.D., Ph.D., Professor of Practice of Surgery in Rush Medical College, Professor of Surgery in the Chicago Polyclinic, Attending Surgeon Presbyterian Hospital, Surgeon-in-Chief St. Joseph's Hospital, President of the American Surgical Association, President of the Association of Military Surgeons of the National Guard of the United States, Permanent Member of the German Congress of Surgeons, etc. Illustrated with 107 Engravings (seven of them colored). In one handsome Royal Octavo Volume. 520 pages. Extra cloth, $4.00 net; sheep, $5.00 net; half-russia, $5.00 net. Philadelphia: The F. A. Davis Co., 1231 Filbert Street.

This book is one of great practical importance to the surgeon as well as to the general physician. It deals with the subject of paramount importance in the medical world today, and throws upon it all the light of recent investigation and experiment. The volume is a model text-book with its clear pathological demonstrations and accurate descriptions of the natural history of the tubercular process, combined with minute and definite methods of treatment. It is withal a book that one cannot afford to do without, in view of the great prevalence of tubercular disease, and while the nature of such bone affections is so often unrecognized.

Mention ought to be made of the attractiveness of the volume as issued by its publishers. It is well bound and durably so, with a clean type, and one most agreeable to the student. The large number of admirably-executed plates, showing the microscopical appearances and the development of the tubercle bacillus, deserves especial notice.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONERS INDEX—A Work of Reference for Medical Practitioners. Published by E. B. Treat, 5 Cooper Union, New York. Price, $2.75.

Among the editors and contributors to this the eleventh year of the Annuel we notice some of the most prominent men in the medical world.

It seems a stupendous undertaking to attempt to cover the whole field of medicine in a single volume, yet when we have examined the Annual we feel assured that it is not impossible. The articles are thoroughly up to the times. The special feature of the work is to present, in a concise way, the advances that have been made in the methods of treatment during the year, and we can most heartily recommend the work as a complete resume of the progress in medicine for the past year.

JOHN S. BOOTIMAN, M.B., B.S., states he has found Cactina Pellets invaluable in long-continued fevers, such as typhoid. The action on the heart was very marked in a typhoid patient sixty-eight years old.